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ABSTRACT

This study took place in a sixth grade math class at Webber Middle School in Saginaw, Michigan. A literature review indicated that a classroom that students perceive as safe, supportive of their autonomy, and of their learning increases intrinsic motivation. With this in mind, the author created a study, which would look for connections between positive, non-controlling feedback and students' views of the classroom as a safe learning environment followed by evidence of an increase in intrinsic motivation. The study further examined whether allowing choice in assignments would increase intrinsic motivation as evidenced by an increase in completed assignments, completed portfolios and an increase in a desire to complete assignments. And finally, it explored whether sharing the content standards and benchmarks with students and asking them to write their own goals, thus supporting autonomy, would increase students' learning and intrinsic motivation as evidenced by pre- and post-tests and a self-assessment of their desire to learn. Appendixes include: the letter indicating completion (to be inserted); student journal form; tally sheet for classroom observation of student active involvement; student classroom environment survey; tally sheet of teacher feedback; tally sheet for completed assignments, extra credit assignments and portfolios; interest inventory--assignment choice; student self-assessment of desire to learn; tally sheet of correct answers for pre- and post-tests; and tally sheet for goals set and goal completion; (Contains 13 references.) (Author)

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ED 482 246

Supporting the Development of Intrinsic Motivation in the Middle School Classroom

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EDU 690: Collaborative Action Research

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Supporting the Development of Intrinsic Motivation in the Middle School Classroom

Introduction

This study took place in a sixth grade math class at Webber Middle School in Saginaw, Michigan. Saginaw Public School District is an urban district servicing around 12,000 students. The student population includes White, African American, and Hispanic students and is predominantly English speaking. Webber Middle School is one of four middle schools housing grades six through eight and has a student population that is predominantly African American with less than ten percent White and Hispanic students. Approximately six hundred sixth, seventh, and eighth grade students attend Webber Middle School. Class sizes average around twenty-five students. Webber Middle School sixth grade includes both regular education and inclusion classrooms. This study took place in a regular education class of twenty students.

I have been teaching for three years with this being my first year teaching sixth grade math. Previously, I taught fifth grade in an elementary building. In the Saginaw Schools, sixth grade is a transition year. One goal of the sixth grade year is for students to become more self-reliant and self-motivated. As the school year progressed, I was hearing my own feelings expressed by other sixth grade teachers; our students seemed to lack self-direction and self-motivation. A literature review indicated that a classroom that students perceive as safe, supportive of their autonomy, and of their learning increases intrinsic motivation. With this in mind, I created a study, which would look for connections between positive, non-controlling feedback and students' views of the classroom as a safe learning environment followed by evidence of an increase in intrinsic motivation. Further, I examined whether allowing choice in assignments would increase

intrinsic motivation as evidenced by an increase in completed assignments, completed portfolios and an increase in a desire to complete assignments. And finally, I explored whether sharing the content standards and benchmarks with students and asking them to write their own goals, thus supporting autonomy, would increase students' learning and intrinsic motivation as evidenced by pre-and post-tests and a self-assessment of their desire to learn.

Literature Review

In a study of beginning teachers in 1984, cited in New Directions in Educational Psychology: 2.Behavior and Motivation in the Classroom, (Hastings & Schwieso, 1987, p. 4) Veenman found that the second highest concern of those teachers was how to motivate students. The motivation most teachers are interested in cultivating and building on in students is intrinsic motivation. Poonam Dev suggests intrinsic motivation can be defined as "(a) participation in an activity purely out of curiosity, that is from a need to know more about something (Deci, 1975; Gottfried, 1983; Woolfolk, 1990); (b) the desire to engage in an activity purely for the sake of participating in and completing a task (Bates, 1979; Deci, Vallerand, Pelletier & Ryan, 1991); and (c) the desire to contribute (Mills, 1991)" (1997, par. 3). Most teachers would agree that this is the motivation they are looking for in their students. Too often, this is not the motivation a teacher encounters in the classroom in connection with learning. A significant amount of research can be found concerning what affects intrinsic motivation and how to foster it in children.

A brief foray into the literature shows very quickly what doesn't work. Attribution theorists have shown that extrinsic rewards decrease intrinsic motivation and in fact, have shown that over time, even extrinsic rewards will not necessarily motivate a student for the given task—even a task they were formerly intrinsically motivated to perform (Paris, Olson, & Stevenson, 1983, p.287). Kim Tracy quotes Eric Jensen in her article as stating, "Rewards create uncertainty in the mind of the learner" (2000, par.3) and Wlodkowski and Ginsberg found in their study that extrinsic rewards cause students to become dependent on those rewards and unable to motivate themselves (as cited in

Hanson, 1998, par. 2). Kohn states, "Rewards are devastatingly effective in smothering enthusiasm for activities children might otherwise enjoy (as cited in Lashaway, 2000, par.19). In 1973, Lepper, Greene, and Nisbett also found that an external reward system could have detrimental effects on the intrinsic motivation of children. (Lashaway, 2000, par. 19). Tracey also quotes Geoffrey and Renate Caine as stating "rewards and punishments can be de-motivating in the long-term, especially when others have control over the system" (par. 5).). Kim Tracey suggests the use of classroom learning celebrations as a way of eliminating the controlling aspects of extrinsic motivation (par. 4). These celebrations are spontaneous, acknowledge accomplishments, and are not connected to control of student behavior. This issue of control is another factor in intrinsic motivation.

Grolnick and Ryan indicate that a classroom environment seen as supporting autonomy, where students see themselves as in charge of their own learning, where choice is common, problem-solving the norm, and feelings are acknowledged fosters intrinsic motivation (as cited in Hastings & Schwieso, 1987, p.213). Autonomy includes learning to identify and independently exercise values, acquiring an interest in and a sense of importance about the activities involved in tasks to be performed, and needing few or no external controls but rather moving towards self-management and self-regulation (p.213). Students in classrooms where autonomy is supported and encouraged see themselves as in control of their learning. Teachers can foster this by offering choices, involving students in problem-solving, allowing for creativity and decision-making opportunities, and by communicating procedures and rules in a neutral way—avoiding the use of "should" or "have to" in the explanations to reduce the sense of

perceived control by students (p.213). This may be where extrinsic motivators, rewards or punishments, material or verbal, become a problem. If extrinsic motivators are perceived as controlling this may contribute to a decrease in intrinsic motivation.

According to Caine and Caine "the brain does not naturally separate emotions and cognition, either anatomically or perceptually" (cited in Rogers & Renard, 1999, par. 4). Accordingly, Rogers and Spence outline a framework for creating a classroom environment which supports this connection between the body and mind in learning which supports intrinsic motivation. They believe students must feel safe, valuable, successful, involved, cared for, and enabled to learn in the classroom and that teachers must work to create such an environment (par. 6-15). Deci, Nezlek, and Sheinman found a correlation between a classroom students see as supporting self-determination--and thus autonomy--and intrinsic motivation (Deci & Ryan, 1985, p.249).

Research has also shown that self-efficacy is another important factor in intrinsic motivation. Self-efficacy involves students' beliefs about their abilities, about their capabilities to apply what they know and their facility at applying their knowledge in instructional contexts in order to learn. According to Schunk, as students increase successes and decrease failures, their self-efficacy, and thus intrinsic motivation, increases (as cited in Hastings & Nigel, 1987, p.233). Covington and Omelich found that students prefer to be seen as both able and motivated more than being merely well motivated. This seems to indicate that the value of success to motivation will be maximized when students see their successes as evidence of ability, not just effort (cited in Paris, Olson, & Stevenson, 1983, p.297). Kagan asserts that the development of intrinsic motivation is internal and that it does not have to be provoked by external

reinforcers provided the environment does not get in the way (cited in Deci & Ryan, 1985, p.115). If the environment provides the optimal challenge—not too hard and not too easy—intrinsic motivation will increase (p.122). Research by Danner and Lonky supports the prediction that children will choose tasks that provide optimal stimulation for cognitive development (p.123). This indicates teachers need to provide tasks that are optimally challenging for students—that is, a continuum of tasks from which to choose. Students will choose those that challenge them but which are not too difficult. Their intrinsic motivation is at work and will be enhanced by the opportunity to choose their own tasks. Deadlines, extrinsic rewards, and communication perceived as controlling could all affect the intrinsic motivation engendered by optimally challenging tasks in a negative way (p.124). However, positive feedback, which tends to occur naturally when children are working at optimally challenging tasks, increases intrinsic motivation (p. 124).

As I consider the literature on intrinsic motivation, I realize that several of my classroom practices could be interfering with the very quality I feel is most important to my students. While I offer some choice, the need to move through material often causes me to also attach deadlines. The literature acknowledges the difficulties teachers face in trying to provide choice to students when faced with high-stakes testing and somewhat rigid curriculum guidelines. I often feel pressured to "cover the material" which does not always take into account this idea of a choice of tasks, which will allow students the opportunity to select optimally challenging tasks for themselves. I believe one area I need to examine is an adjustment in how I assign tasks and the possibility of finding ways to include students in decisions about their learning.

In the middle school where I teach, we are reaping the "rewards" of the extrinsic reward system in place in many elementary classrooms, and even in many of our own middle school classrooms. Students often want to know what the reward is for completing tasks. They want "student appreciation day" which is essentially a day of treats and movies, or they are looking for a handful of candy at the end of the week. I have long felt these extrinsic rewards undermine learning and the research supports that intuition. However, this is an issue I need to find a way to deal with positively. Because creating a classroom environment supportive of and receptive to students is an important factor, I believe I must find a way to incorporate positive feedback (verbally and perhaps in celebrations of learning), which will support the students need for recognition but keeps the ball in their court so to speak. I want to examine how increasing positive, non-controlling responses will affect intrinsic motivation in my classroom and whether it will increase student perceptions of the classroom as a supportive learning environment.

Finally, I want to explore whether sharing the content standards and benchmarks with students and allowing them to set goals for themselves based on those standards and benchmarks will increase their sense of control over their own learning and thus their intrinsic motivation. Increasing students ownership of tasks, looking for ways to increase choice, and increasing positive feedback are supported in the literature as ways of increasing intrinsic motivation. It will be interesting and worthwhile to pursue ways of implementing these ideas in the classroom.

Research Process

One focus of this action research was to examine if increasing students' perceptions of the classroom as a safe learning environment by increasing positive non-controlling feedback would result in them taking an active role in their learning, evidence of increased intrinsic motivation. To gather data, I recruited a reliable student to tally teacher comments during direct instruction. Each week, I checked the number of positive responses and made a conscious effort to increase the number of positive comments the next week. Students were asked to make a short journal entry each day about how they were feeling about the classroom that day. I tallied positive and negative remarks from these journals and compared them to the final classroom observation of teacher positive feedback tallied by the student. During this time period, the kinds of student responses made during instruction (voluntary as opposed to waiting to be called on by the teacher) were tallied as a measure of intrinsic motivation. Students also completed a student survey about the classroom environment at the beginning of the data collection and again at the end of the data collection in order to measure any change in students' views of the classroom climate and to gauge intrinsic motivation.

To determine if allowing students increased choice in assignments would increase their feelings of autonomy, I used a student interest inventory to gauge their feelings about choice in assignments. Theoretically, an increase in a sense of autonomy should be followed by an increase in intrinsic motivation. Items such as an increase in completed assignments, an increase in extra credit turned in, and more complete math portfolios (math folders) were considered evidence of intrinsic motivation. Teacher records were used to compute and compare the percentage of missing assignments before and after the

institution of choice. Student portfolios were used to determine the number of students completing extra credit assignments and were checked for completeness. A connection between feelings identified in the interest inventory and completed assignments, extra credit, and complete portfolios, was expected.

To see if exposure to content standards and benchmarks, and writing goals connected to them would increase students' desire to learn, that is, their intrinsic motivation, the content standards and benchmarks connected to the material being learned were shared with students. Students were asked to write goals attached to these standards and to assess whether they felt they had achieved their goals. Data about the number of goals written and the number of goals perceived as completed by students was tallied. This data was compared to pre- and post-test scores for the given time period to verify if student perceptions of completed goals was accurate. Pre- and post-test scores for the given time period were compared with those from previous units for which the standards and benchmarks were not shared and specific goals were not written to look for an increase in learn which conceivably follows an increase in intrinsic motivation. Furthermore, students were asked to complete a student self-assessment of their desire to learn the content and how it may have been affected by exposure to the content standards and benchmarks. Theoretically, if students gained a sense of autonomy through being aware of the standards and benchmarks, this would be evidenced by a desire to continue to have those standards and benchmarks shared in the future.

Data Analysis

As I began to sift through the data gathered to determine if increasing positive non-controlling feedback would increase students' view of the classroom as a safe and supportive learning environment followed by an increase in intrinsic motivation as evidenced by an increase in student active involvement and agreement with statements concerning their desire to learn and assignment completion, several interesting trends developed. When I looked at the tally sheet recording teacher positive comments (see Table 1.), I realized that in a week, during direct instruction, the number of comments to students is actually minimal. In reality, most of my feedback to students occurs as they are working on assignments and while I am working with them one on one or in small group settings.

Tally of Teacher Positive Feedback during Direct Instruction				
	Week 1	Week 2	Week 3	Week 4
Teacher Positive Comments	12	14	16	18
Total Teacher Comments	20	22	21	22
Percent	60%	76%	76%	81%

Table 1. Teacher Positive Feedback

The highest number of comments made during direct instruction in an entire week during the four weeks of data gathering was only 22, about four to five comments a day during direct instruction which generally lasts about fifteen minutes. I was able to increase the percentage of comments during direct instruction that could be considered positive feedback from 60 percent to 81 percent. I then compared this increase in positive teacher

responses to the positive journal responses made by students during data collection looking for a connection between the data that would show an increase in the view of the classroom as a supportive learning environment (see Figure 1) due to the increase in positive teacher responses. There was a small increase in the number of positive student journal responses.

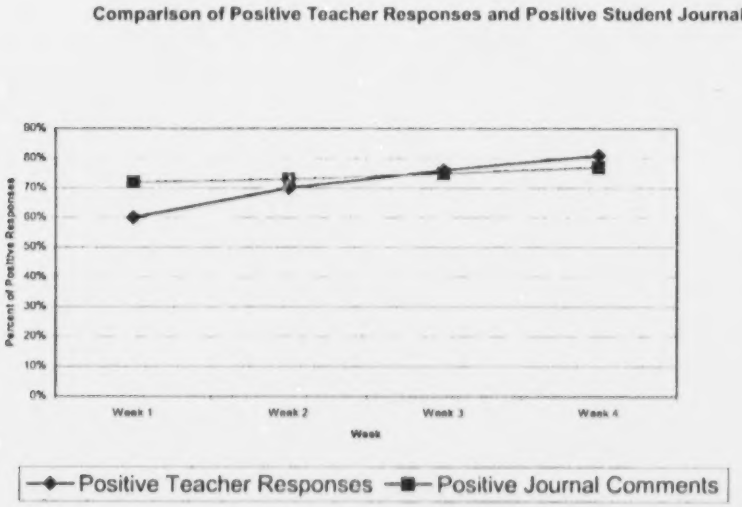
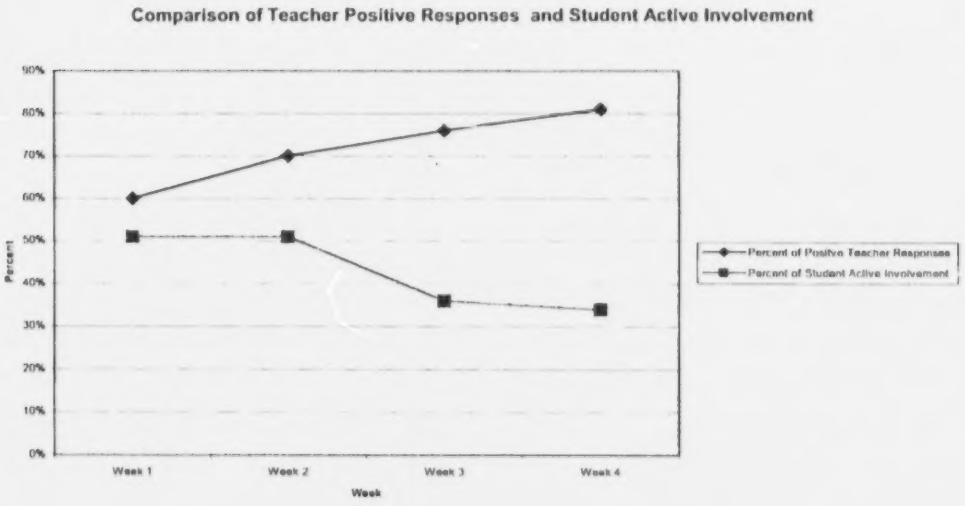


Figure 1. Comparison of Teacher and Student Positive Responses

However, when I compared this increase in positive teacher responses with the data related to student active involvement (evidence of intrinsic motivation), there was an actual decrease in student active involvement over the course of the data collection period (see Figure 2).

Figure 2. Teacher Positive Responses and Student Active Involvement



Additionally, the classroom environment survey showed a similar trend. The classroom environment survey was given at the beginning and end of data collection. The results of the recorded responses are shown in Tables 2 and 3. The first survey indicates that students had a generally positive view of the classroom. Fifty percent of the students agreed or strongly agreed they felt the classroom was a safe place, 90 percent agreed or strongly agreed they could get help when they needed it, and 85 percent of the students agreed or strongly agreed they heard positive comments from the teacher everyday. The survey completed at the end of data collection, indicated the number of students who strongly agreed or agreed that the classroom was a safe environment rose to 75 percent, the number who agreed that they felt they could get the help they needed rose to 100 percent, while the number of students who felt they heard positive comments from the teacher everyday actually decreased to 75 percent with 10 percent undecided and those who disagreed remaining at 15 percent. This last piece was interesting as the tally of

Table 2. Student Survey 4-29-2003

Student Classroom Environment Survey – Date 4-29-2003					
	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1.I feel the classroom is a safe place.	25%	25%		40%	10%
2.I feel I can get the help I need in this classroom.	40%	50%		10%	
3.I hear positive comments from my teacher each day.		85%		15%	
4.I would like to hear more positive comments from my teacher.	25%	40%		25%	10%
5.I want to learn.	70%	30%			
6.I finish my assignments on a regular basis.	30%	30%		20%	10%

Table 3. Student Survey 5-29-2003

Student Classroom Environment Survey – Date 5-29-2003					
	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1.I feel the classroom is a safe place.	20%	55%		25%	
2.I feel I can get the help I need in this classroom.	50%	50%			
3.I hear positive comments from my teacher each day.	20%	55%	10%	15%	
4.I would like to hear more positive comments from my teacher.	35%	50%		15%	
5.I want to learn.	65%	25%		10%	
6.I finish my assignments on a regular basis.	30%	30%	5%	25%	10%

actually showed an increase in teacher positive responses. One could hypothesize that students were considering one on one responses rather than positive comments made during instruction and this could account for the discrepancy. While there was a slight increase in student positive journal responses as teacher positive responses went up, and the survey seems to indicate that there was an increase in the number of students who agreed or strongly agreed that the classroom was safe and supported their learning (they could get the help they needed), there was not a corresponding increase in the number of students who indicated a desire to learn or who believed they finished assignments on a regular basis (indicators of intrinsic motivation). This is a similar finding to the finding that an increase in positive teacher responses did not generate a corresponding increase in student active involvement, which might have indicated an increase in intrinsic motivation.

Intrinsic motivation did appear to increase when students were given choice in assignments. During the sixth marking period of the school year, students were given assignments from a range of problems and allowed to choose the problems they wished to complete. For example, students might be told to complete ten problems from a selection of twenty problems. Each assignment offered problems with a range of difficulties. At the end of this marking period, students were given an interest inventory as a measure of their interest in completing assignments when they were given choice. The responses to this inventory along with data about the number of assignments completed, the number of extra credit assignments added to student portfolios and the completeness of those portfolios as compared to previous marking periods were evaluated as evidence of intrinsic motivation. (Note: A number of items were suppose to be included in portfolios

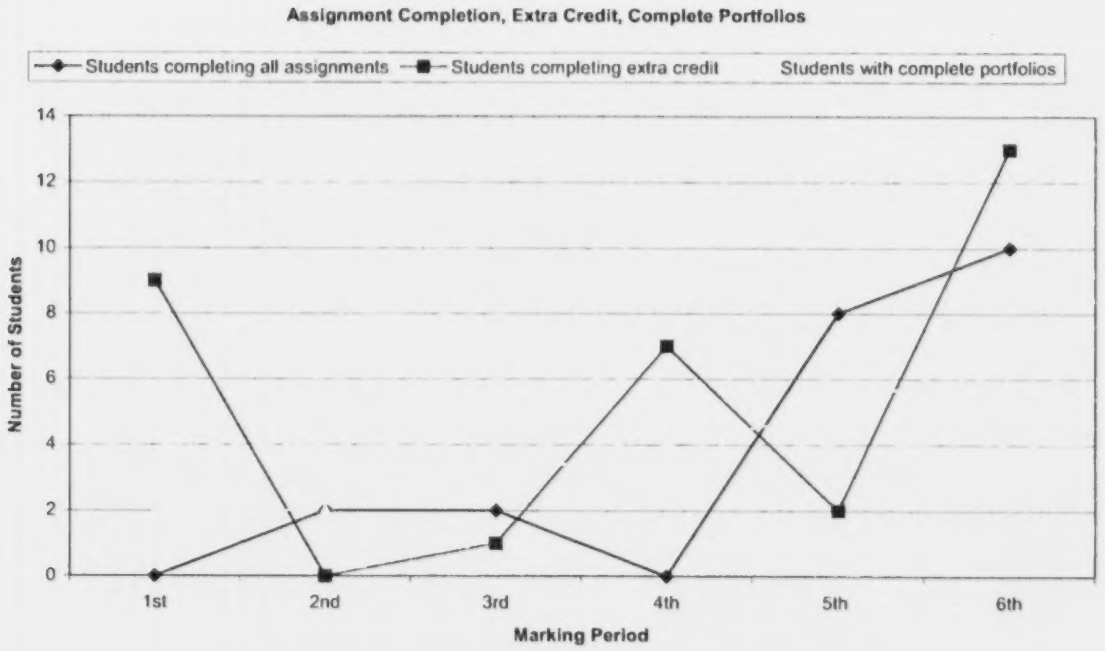
that were not necessarily graded but were useful to the students for study purposes and/or to show progress the student had made. This is what was considered in the portfolio evaluation). The results of the interest inventory are shown in Table 4. The majority of students strongly agreed or agreed that they liked

Table 4. Student Interest Inventory

Student Interest Inventory – Assignment Choices					
	Strongly Agree	Agree	No Feeling	Disagree	Strongly Disagree
1.I complete all my assignments.	4	7	1	5	3
2.I like having choice in my assignments.	10	8	1	1	
3.I would be more likely to complete assignments if I have choice.	7	9		2	2

having choice (18 out of 20) and that they would be more likely to complete assignments if they were given choice (17 out of 20). The data showed that more students completed all assignments during the sixth marking period when choice was instituted than any other marking period of the year. This was true for the number of extra credit assignments handed in and in the completeness of student portfolios (see Figure 3). The change in the number of complete portfolios had consistently increased each marking period and may reflect students' better understanding of the process rather than an increase in intrinsic motivation because of assignment choice. But, the increase in the number of completed assignments and in extra credit assignments seems connected to assignment choice especially when connected to the results of the interest inventory. The data indicates being given choice increased student interest in and motivation to complete assignments.

Figure 3. Completed assignments, extra credit, complete portfolio data for each marking period (2002-2003).



Another factor that appeared to have an effect on intrinsic motivation was sharing content standards and benchmarks with students and having them write goals connected to those standards. During the sixth marking period, the content standards being covered in the unit were shared with students. Each time a standard was addressed in a lesson, the students were informed. They were asked to write a goal connected with the standard, and when that goal was completed, to indicate what they had learned, and then write another goal connected to a different standard. A review of the student goals and student evaluation of goal completion indicated that a total of 42 goals were set during the

marking period and students indicated that 30 of those goals had been achieved. The range of goals set was from one to six with the highest number of goals achieved being six. Every student, except one, indicated completion of at least one goal (see Table 5).

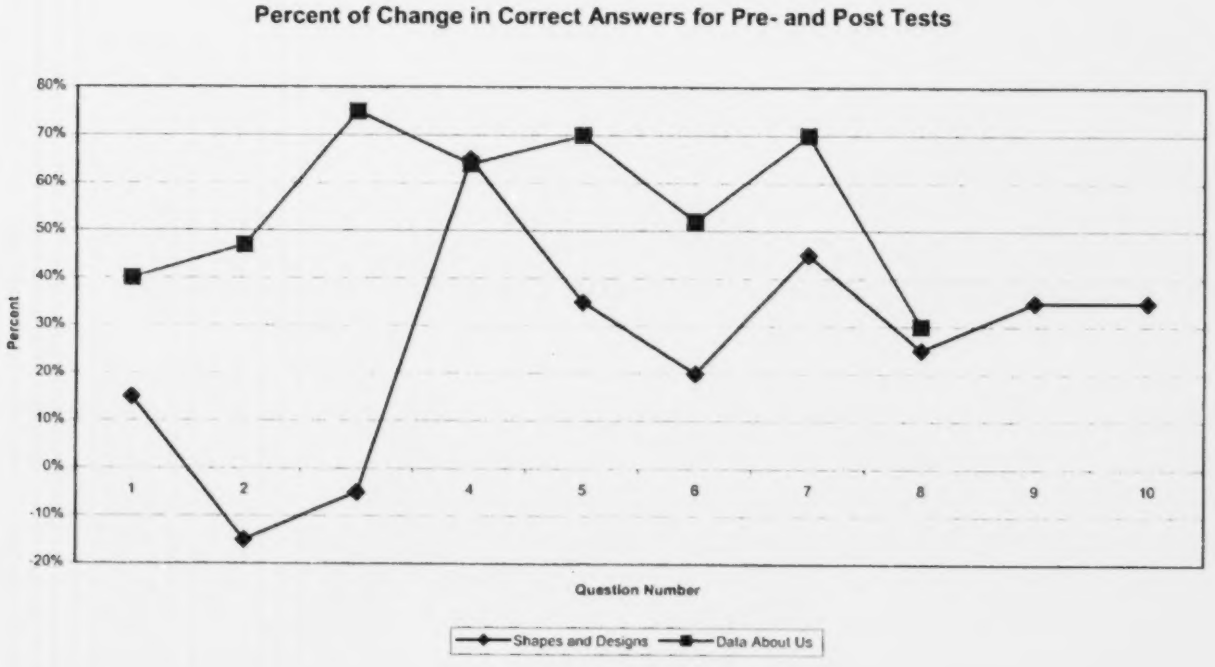
Table 5. Tally Sheet – Goals Set Versus Goals Achieved per Student Evaluation

Student	# of Goals Set	# of Goals Completed
1	1	1
2	1	1
3	1	1
4	2	1
5	2	2
6	2	1
7	2	2
8	2	1
9	1	1
10	3	1
11	2	3
12	2	1
13	6	6
14	3	0
15	1	1
16	1	1
17	3	1
18	2	1
19	2	1
20	3	3
Totals	42	30

An evaluation of pre- and post-test scores for the unit for which content standards were shared and previous pre- and post-test scores for which standards were not shared indicates that students may have underestimated their learning when they evaluated whether they had attained the goals connected to the content standards. Students were not aware of the content standards during the Shapes and Designs Unit and were aware of

the content standards during the Data About Us Unit. The test for Shapes and Designs had ten questions and the test for Data About Us had eight questions. Figure 4 indicates that the percent of increase of correct answers for seven out of eight questions on the Data About Us post-test was greater than the percent of increase on questions on the Shapes and Designs test. Students were much more successful in learning the material in the Data About Us Unit after being exposed to the content standards and benchmarks. In general, students were much more successful than their self-assessment of goals achieved indicated.

Figure 4. Comparison of Increase in Correct Answers between the Pre- and Post-Tests for Shapes and Designs Unit and Data About Us Unit



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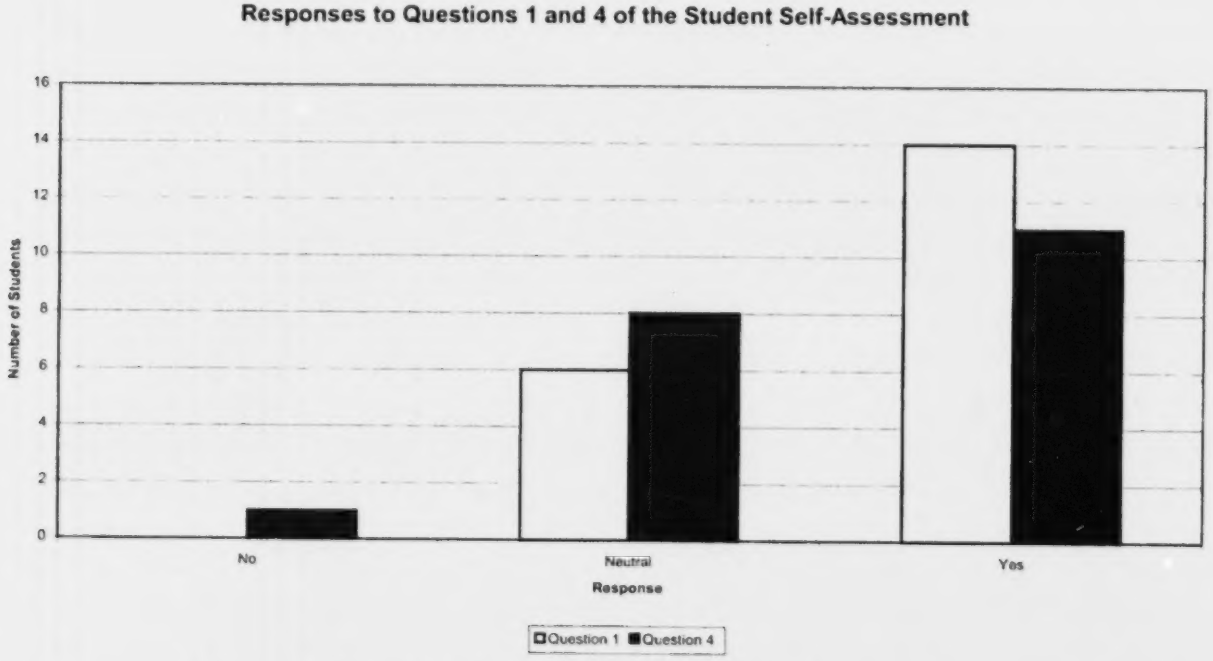
Is this increased learning due solely to exposure to the content standards or is it connected to an increase in intrinsic motivation due to exposure to the content standards? The Student Self-Assessment of Desire to Learn shows some connection between knowing the content standards and intrinsic motivation. Figure 5 shows the student responses to the questions 1 and 4 on the Assessment. The actual assessment is found in Figure 6.

Figure 5. Student Self-Assessment to Learn, Questions 1 and 4



Fourteen out of twenty students indicated they liked knowing the content standards being focused on during instruction with six students neutral and no students indicating they did not like knowing the content standards. Only one student indicated a negative response to knowing the content standards in the future with eight students

Figure 6. Student Self-Assessment of Desire to Learn Content

Student Self-Assessment of Desire to Learn Content

1.Indicate below if you liked being told what the content standard the class was focusing on was.

1. No, I would rather not worry about what the content standards are.
2. I am neutral, don't care one way or the other if I know the content standard.
3. Yes, I liked knowing what the content standard was.

2.Indicate below if you feel knowing the content standard helped you learn the material.

1. No, I don't think knowing the content standard helped me learn the material.
2. I think knowing the content standard had some effect on my learning the material.
3. Yes, knowing the content standard helped my learning a great deal.

3. Indicate below if knowing what content standard the class was focusing on had an effect on your desire to learn the material.

1. No, it made no difference in my desire to learn the material.
2. It had some effect on my desire to learn the material.
3. Yes, it made a big difference in my desire to learn the material.

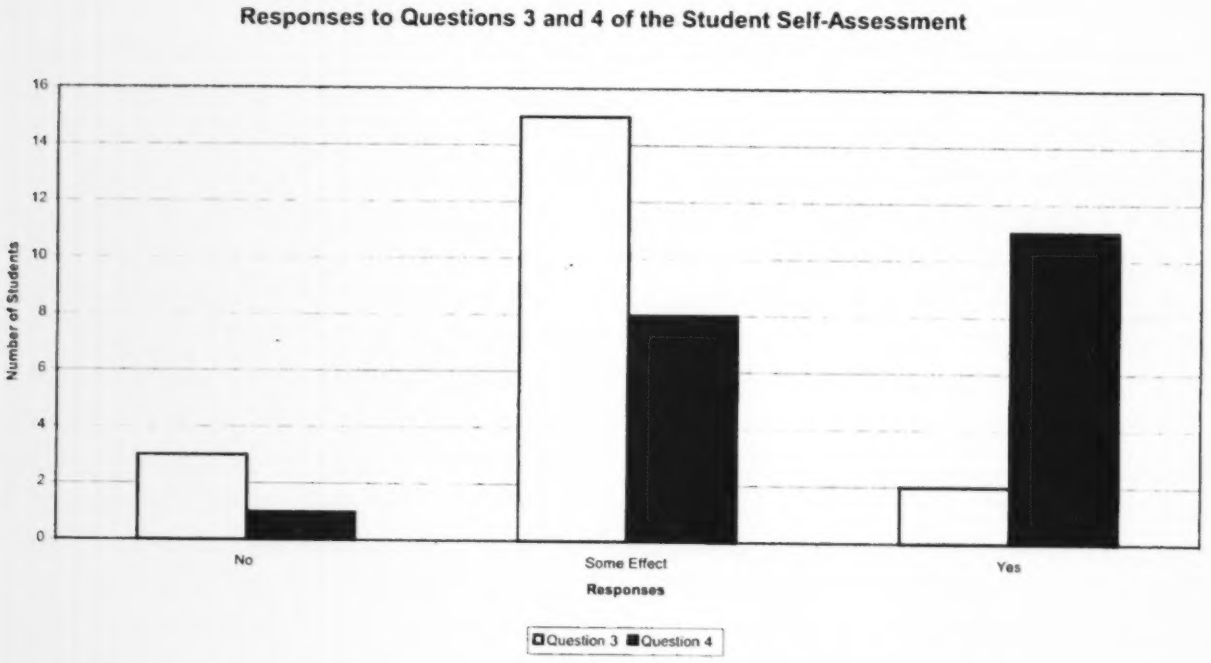
4.In the future would you like to know the content standards you are suppose to be learning?

1. I would rather not know the content standards I am working on.
2. It doesn't matter to me if I do or do not know the content standards I am working on.
3. I would like to know the content standards I am working on.

responding neutrally and the majority (eleven students) indicating they would like to know the content standards in the future. This interest in knowing the content standard

could be considered evidence of intrinsic motivation especially in connection with questions 2 and 3. The responses to questions two and three are shown in Figure 7.

Figure 7. Responses to Questions 2 and 3 of the Student-Self Assessment



The majority of students responded positively to the content standards helping them learn the material with fifteen students indicating some effect and two students indicating a definite effect. Their assessment is supported by the results of the post-test Question four has a direct association with intrinsic motivation. It asked students to assess if knowing the content standard had an effect on their desire to learn the material. Once again the majority of students responded positively to this question. Eleven students indicated knowing the content standards had some effect and seven more acknowledged a definite effect. Only one student reported no effect. This data supports the idea that

exposure to the content standards increases intrinsic motivation. I think the increase in the amount of learning indicated by the pre- and post-test results is connected to this increase motivation to learn the material.

Action Plan

Upon first consideration of my research, it appears that, even though research supports and I believe, that non-controlling, positive feedback leads to a positive, classroom environment and, thus, to an increase in intrinsic motivation, increasing positive non-controlling feedback to students did not increase intrinsic motivation in this classroom study. However, I believe this may be connected to several factors. I suspect the feedback measured, comments made during direct instruction, had a minimal effect if any, because the number of comments during instruction is minimal. There may not have been enough time for the increase in positive comments to show a real effect. In the past, I have noticed that changes in approach often lead to n initial dip in behavior or learning as students react and adjust to the change. A dip of this sort appeared in the measure of student active involvement even though positive comments by the teacher and in student journals increased. Another factor, which may have affected this data was the positive comments may have been perceived as controlling by the students. If this is true, it may have actually resulted in the associated dip in active involvement. I intend to pursue increasing positive non-controlling feedback in my classroom next year. I will generate a list of comments which are non-controlling and practice using them regularly in my classroom during instruction but especially as I circulate and work with individuals and small groups. I will give a classroom climate survey at the beginning of each marking period to get a picture of students' perceptions of the classroom environment, and I will ask a colleague to tally my responses several times each marking period to be sure I am keeping the level up.

Another direction I intend to pursue is assignment choice. I will continue to offer math assignments with a range of difficulties from which students can choose. The students responded well to assignment choice. Even before examining the data, I had a sense that being able to have choice in assignments was motivating to students. The fact that more students were willing to do extra credit was also beneficial. Often, students ended up doing all the problems they could choose from—the extra ones becoming extra credit. I intend to follow up on assignment choice more completely. As part of student portfolios, students will complete a record of the problems they completed. The sheet will contain a list of problem choices and the choices will be connected to the content standards so students can better measure what they are learning. Like choice, being able to associate the problems completed with the standard being learned should give students a sense of control over their learning. This sense of control should increase student feelings of autonomy which research indicates also supports intrinsic motivation. I will ask students to maintain a learning journal where they will record their feelings about their learning, and about the problems they choose. I will review these journals as a way of measuring how students are feeling about the work they are doing and whether the problems are appropriately challenging.

Finally, when I consider the effect that knowing content standards and setting goals associated with those standards had on not only intrinsic motivation but on overall learning, I will certainly pursue this avenue. The students clearly liked knowing the content standards. Next year, students will receive a complete list of content standards (rewritten in "kid-friendly" language) at the beginning of each unit. These standards will be discussed to be sure students understand what they mean. Students will pick a

standard to focus on and will write a goal. On Mondays and Fridays, students will review their goals; if they believe they have achieved the goal, they will write a brief statement about why they know it has been achieved; finally students will set new goals. I will review these goals regularly. We will keep class records of the number of goals set and the number of goals achieved, and we will create a chart comparing correct answers on pre- and post-tests so students can see the class progress. This approach will not only generate data for me to compare but will provide more opportunities for students to develop a sense of autonomy as they see evidence of the progress being made.

While I do not feel I have found a complete methodology for increasing intrinsic motivation in students, this study has helped me to consider several approaches and consider different ways of implementing those approaches. As the year progresses and I feel we have established routines supporting the methods researched in this study, I will revisit my literature review and new research to consider other approaches which will support the development of intrinsic motivation in students.

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Appendix A

Letter indicating completion of 8/PA2 will be inserted here.

Appendix B

Student Journal

Student Journal

At the end of the day, write a sentence or two about how you feel about our classroom. Was this a good day for you? Do you feel you learned today? How do you know? Did you feel you could get the help you needed?

WEEK 1

Day # 1

Day# 2

Day# 3

Day# 4

Day# 5

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Appendix C

Tally Sheet for Classroom Observation of Student Active Involvement

	Week 1	Week 2	Week 3	Week 4
Students responding to questions				
Students asking questions				
Students offering information				
Total Responses per week				

Appendix D

Student Classroom Environment Survey

Indicate whether you strongly agree, agree, are neutral (have no feeling one way or the other) disagree, or strongly disagree with each statement in the chart below.

Student Classroom Environment Survey – Date:					
	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1.I feel the classroom is a safe place.					
2.I feel I can get the help I need in this classroom.					
3.I hear positive comments from my teacher each day.					
4.I would like to hear more positive comments from my teacher.					
5.I want to learn.					
6.I finish my assignments on a regular basis.					

Appendix E

Tally Sheet of Teacher Feedback

Tally of Teacher Positive Feedback during Direct Instruction				
	Week 1	Week 2	Week 3	Week 4
Teacher Positive Comments				
Total Teacher Comments				

Appendix F

Tally Sheet for Completed Assignments, Extra Credit Assignments, Completed Portfolios

Marking Period	1	2	3	4	5	6
Missing Assignments (gradebook)						
Extra Credit (student portfolio)						
Complete Portfolios						

Appendix G

Interest Inventory – Assignment Choice

Student Interest Inventory – Assignment Choices					
	Strongly Agree	Agree	No Feeling	Disagree	Strongly Disagree
1.I complete all my assignments.					
2.I like having choice in my assignments.					
3.I would be more likely to complete assignments if I have choice.					

Appendix H

Student Self- Assessment of Desire to Learn

Student Self-Assessment of Desire to Learn Content

1.Indicate below if you liked being told what the content standard the class was focusing on was.

1. No, I would rather not worry about what the content standards are.
2. I am neutral, don't care one way or the other if I know the content standard.
3. Yes, I liked knowing what the content standard was.

2.Indicate below if you feel knowing the content standard helped you learn the material.

1. No, I don't think knowing the content standard helped me learn the material.
2. I think knowing the content standard had some effect on my learning the material.
3. Yes, knowing the content standard helped my learning a great deal.

3. Indicate below if knowing what content standard the class was focusing on had an effect on your desire to learn the material.

1. No, it made no difference in my desire to learn the material.
2. It had some effect on my desire to learn the material.
3. Yes, it made a big difference in my desire to learn the material.

4.In the future would you like to know the content standards you are suppose to be learning?

1. I would rather not know the content standards I am working on.
2. It doesn't matter to me if I do or do not know the content standards I am working on.
3. I would like to know the content standards I am working on.

Appendix I

Tally Sheet of Correct Answers for Pre- and Post-Tests

Unit	Shapes and Designs Pre-test Results	Shapes and Designs Post-Test Results	Data About Us Pre-test Results	Data About Us Post-test Results
Question #				
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				

Appendix J

Tally Sheet for Goals Set and Goal Completion

Student	# of Goals Set	# of Goals Completed
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		
Totals		

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